

REMARKS/ARGUMENTS

Prior to this amendment, claims 1-24 were pending. In this amendment, claims 9 and 15 are amended. Claims 23-24 are canceled, and no claims are added. No new matter is added. Thus, after entry of this amendment, claims 1-22 will be pending.

Interview

Applicants would like to thank the Examiner for extending the courtesy of a telephone interview with counsel, David B. Raczkowski, on March 27, 2009, where differences between the pending claims and the cited references were discussed, along with differences from potential amendments to the claims.

Election / Restrictions

Claims 23 and 24 were held to be directed to an independent invention from claims 1-22. Claims 23 and 24 are now canceled.

Claim Objections

Claim 15 is objected to, but it is not clear exactly what the objection is. It appears that the Office Action objects to claim 15 containing functional language that is not appropriate for an apparatus claim.

Applicants have amended claim 15 to include a computer readable medium containing the structural elements of code. Applicants submit that each functional element resulting from the code must be addressed. *See* MPEP § 2106.01.

Claim Rejections - 35 USC § 103(a), Culbertson

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Culbertson et al (US Pat. 5,790,771; hereinafter referred to as Culbertson).

Claim 1 is allowable over Culbertson as Culbertson fails to teach or suggest all the elements of claim 1. For example, claim 1 recites:

*receiving a plurality of failed test patterns, ...
identifying a subset of the routing resources, wherein the subset comprises
one or more routing resources that respectively occur in the most failed test
paths; and*

generating new test patterns including program bits that define new test paths for testing a first routing resource of the subset of the routing resources, wherein each of the new test paths includes:
the first routing resource; and
a combination, not included in the other new test paths, of fan-in and fan-out resources that are programmably connectable to the first routing resource,
wherein the new test paths test every combination of fan-in and fan-out resources that are programmably connectable to the first routing resource.

At page 4, the Office Action states that Culbertson identifies defective resources in intermediate stages of testing. Thus, the failed test patterns would correspond to a first set of configurations, which would include at least the first configuration performed in step 52. *See Culbertson*, FIG. 4A and 4B and col. 8 lines 45-50. At step 58, Culbertson determines whether all of the resources have been adequately tested by the first set of configurations. *Id.* At step 59, Culbertson then reconfigures the circuit to obtain a second set of configurations (asserted new test patterns) that are different from the first set. *Id.*, col. 6 line 67 to col. 7 line 1.

As the second set is different from the first set, the second set provides only some of the combinations, not all. Accordingly, Culbertson does not teach or suggest, “*wherein the new test paths test every combination of fan-in and fan-out resources that are programmably connectable to the first routing resource*” as recited in claim 1.

Additionally, the Office Action notes that it would have been obvious to include every combination of fan-in and fan-out resources in the set of all tested configurations, i.e. first set and second set. Even if this were true, the second set of configurations would only include some of all the tested configurations.

For at least these reasons, claim 1 and its dependent claims are allowable over Culbertson.

Claims 9

Applicants submit that independent claim 9 and its dependent claims should be allowable for a same rationale as claim 1.

Claim 15

Claim 15 is allowable over Culbertson as Culbertson fails to teach or suggest all the elements of claim 15. For example, claim 15 recites:

(c) calculates a total number of occurrences of each resource in the failed test paths received in the file, at least one resource occurring in two failed test paths; and
(d) identifies a subset of the routing resources, wherein the subset comprises one or more resources having the highest number of occurrences; and code for an adaptive failure isolation (AFI) tool that subsequent to completion of (b)-(d) generates new test patterns including program bits that define new test paths for testing the subset of the routing resources.

After all of the resources have been adequately tested (step 58), Culbertson identifies the resources that remain marked as being defective and stores the identification of the defective resources in the database (step 60). *Id.*, FIG. 4B. At page 9, the Office Action states that keeping count of the number of times that a resource appears in a failing configuration is a matter of design choice. A simple statement that a feature is a design choice is not a proper rejection. *See* MPEP 2144.04 (C). A motivation for why one skilled in the art would make such choices is still required.

Furthermore, even if it was obvious for step 60 to include the count of the number of failed configurations, such a step would occur after all of the configurations are tested, i.e. after new configurations were tested. Thus, the new test patterns would be tested prior to the counting. In contrast, claim 15 recites “subsequent to completion of (b)-(d) generates new test patterns.”

For at least these reasons, claim 15 and its dependent claims are allowable over Culbertson.

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PATENT

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,

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